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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/960,282	09/24/2001	Hiroshi Kondo	862.C2390	4768

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[REDACTED] EXAMINER

MUTSCHLER, BRIAN L

[REDACTED] ART UNIT

1753

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No. 09/960,282 Examiner Brian L. Mutschler	Applicant(s) KONDO ET AL. Art Unit 1753
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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-9 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 24 September 2001 is/are: a) accepted or b) objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner. If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) Interview Summary (PTO-413) Paper No(s) _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
2. Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1 at line 16, in claim 2 at line 4 and in claim 3 at line 4, the term "predetermined" renders the claim indefinite because it is not clearly defined what the term implies. The term "predetermined" merely means determined beforehand and does not an adequate description of what is being claimed. The same applies to dependent claims 4-9.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simburger et al. (U.S. Pat. No. 6,300,158) in view of Weinberg (U.S. Pat. No. 6,262,558).

Simburger et al. disclose a solar battery comprising a solar cell array disposed on one side of a substrate and a power converter disposed on the opposite side of the substrate (col. 5, lines 10-15). The module is connected using a simple two wire bus (col. 3, lines 19-23). Simburger et al. further disclose connecting a plurality of solar cell power modules to form a solar cell array (col. 5, lines 22-29). Since the device of Simburger et al. uses a two wire bus and a plurality of devices can be used to form an array, the device would inherently have an input connector for collecting power from outside the device and an output connector for outputting the power.

The device of Simburger et al. differs from the instant invention because Simburger et al. do not disclose the use of a detector or a controller, as recited in claims 1-3, and a DC-DC converter, as recited in claim 7.

Weinberg discloses a solar battery having a plurality of solar cells. The device has a current detector **211** to detect the current from the solar cells (col. 10, line 51). The device further comprises a plurality of switches and a switch controller for controlling the switches to maintain the output of the solar cell array (col. 3, lines 31-41). The switches disconnect portions of the solar array to match the solar array power to the load (col. 3, line 45-48). Weinberg also discloses a DC-DC converter to convert the produced current into a current that is usable by the load (col. 2, line 23).

Regarding claims 1-3, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Simburger et al. to use a current detector and a controller as taught by Weinberg because a current

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detector and controller would allow the device to match the power of the solar battery with the power requirements of the load.

Regarding claim 7, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Simburger et al. to use a DC-DC converter as taught by Weinberg because a DC-DC converter allows the power generated by the solar cells to be converted into a more usable current for the load.

5. Claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simburger et al. (U.S. Pat. No. 6,300,158) and Weinberg (U.S. Pat. No. 6,262,558), as applied above to claims 1-3, 7 and 8, and further in view of Uchihashi et al. (U.S. Pat. No. 5,951,785).

Simburger et al. and Weinberg describe a device having the limitations recited in claims 1-3, 7 and 8 of the instant invention, as described above in paragraph 4.

The device of Simburger et al. and Weinberg differs from the instant invention because they do not disclose the use of a plug and receptacle connection means for the input and output connectors, as recited in claim 4, and an inverter for converting DC power to AC, as recited in claim 6.

Uchihashi et al. disclose a solar cell module having an integrated DC-AC inverter and plug 14 and receptacle connection means for connecting the modules (col. 1, lines 26-29; col. 6, lines 5-9).

Regarding claim 4, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device described by Simburger et al. and Weinberg to use a plug and receptacle connection means as taught by Uchihashi et al. because a plug and receptacle allows for easy installation of the solar cell modules.

Regarding claim 6, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device described by Simburger et al. and Weinberg to use an DC-AC inverter as taught by Uchihashi et al. because a DC-AC inverter would convert the DC power generated by the solar cells to AC power, a form of power used for many applications.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Simburger et al. (U.S. Pat. No. 6,300,158) and Weinberg (U.S. Pat. No. 6,262,558), as applied above to claims 1-3, 7 and 8, and further in view of Cowan (U.S. Pat. No. 5,569,998).

Simburger et al. and Weinberg describe a device having the limitations recited in claims 1-3, 7 and 8 of the instant invention, as described above in paragraph 4.

The device of Simburger et al. and Weinberg differs from the instant invention because they do not disclose the use of an indicator to indicate a control state of the power converter.

Cowan discloses a solar battery device comprising a DC-DC converter and an indicator 37 that provides an indication of the status of the power generator (col. 5, lines 1-2).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device described by Simburger et al. and Weinberg to use an indicator as taught by Cowan because an indicator would allow the user to quickly ascertain the operating condition of the device.

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Simburger et al. (U.S. Pat. No. 6,300,158) and Weinberg (U.S. Pat. No. 6,262,558), as applied above to claims 1-3, 7 and 8, and further in view of Harris (U.S. Pat. No. 4,409,537).

Simburger et al. and Weinberg describe a device having the limitations recited in claims 1-3, 7 and 8 of the instant invention, as described above in paragraph 4.

The device of Simburger et al. and Weinberg differs from the instant invention because they do not disclose connecting a plurality of the devices in a single-phase three-wire system.

Harris discloses a connection method for a plurality of solar cells wherein the solar cells are connected to a three-wire system (col. 1, line 59 to col. 2, line 15). The three-wire system "prevents a fault in one group of primary cells from inhibiting the normal operation of any other group in the power transmission system" (col. 2, lines 11-13).

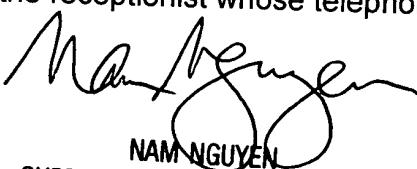
It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device described by Simburger et al. and Weinberg to connect a plurality of devices using a three-wire system as taught by Harris because a three-wire system "prevents a fault in one group of primary cells from inhibiting the normal operation of any other group in the power transmission system" (col. 2, lines 11-13).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian L. Mutschler whose telephone number is (703) 305-0180. The examiner can normally be reached on Monday-Friday from 8:00am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (703) 308-3322. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



NAM NGUYEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700

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July 8, 2002